

**What is claimed is :**

1. A light-mixing layer for absorbing a light source, comprising:

light-scattering particles for scattering the light emitted from the light source;

- 5 phosphor particles for converting a portion of the light originating from the light source into another wavelength light; and

diffuser particles for mixing the light emitted from the light-scattering particles and the phosphor particles;

- 10 wherein the light-scattering particles, phosphor particles and diffuser particles are arranged in a particle-interlaced order.

2. The light-mixing layer of Claim 1, wherein an arrangement of the light-scattering particles, diffuser particles and phosphor particles is made by a process of printing, dispersion, SPIN, evaporation, inertial force, expresseure, condensation, cladding or sputtering.

- 15 3. The light-mixing layer of Claim 1, wherein the light-scattering particles are made of quartz, glass or polymeric transparent materials.

4. The light-mixing layer of Claim 1, wherein the diffuser particles are selected from a group consisting of BaTiO<sub>3</sub>, Ti<sub>2</sub>O<sub>3</sub> and SiO<sub>x</sub>.

- 20 5. The light-mixing layer of Claim 1, wherein the phosphor particles are made of an inorganic phosphor matter.

6. The light-mixing layer of Claim 1, which covers the light source by a process of inertial force, expresseure or condensation.

7. The light-mixing layer of Claim 1, which covers the light source by a coating or printing process.

8. The light-mixing layer of Claim 1, which covers the light source by a sputtering, cladding or evaporation process.

5 9. The light-mixing layer of Claim 1, which keeps a distance from the light source, and absorbs the light emitted from the light source by reflection.

10 10. The light-mixing layer of Claim 1, wherein the light-scattering particles occupy 10% to 70% by weight, the phosphor particles occupy 10% to 65% by weight and the diffuser particles occupy 15% to 60% by weight.

11. An LED component, comprising a chip, a chip cup, electrodes and a transparent encapsulant, characterized in that the LED component includes a light-mixing layer for absorbing light emitted from the LED chip, the light-mixing layer including light-scattering particles for scattering the light emitted from the LED chip, phosphor particles for converting a portion of the light originating from the LED chip into another wavelength light and diffuser particles for mixing the light emitted from the light-scattering particles and the phosphor particles, wherein the light-scattering particles, phosphor particles and diffuser particles are arranged in a particle-interlaced order.

12. The LED component of Claim 11, wherein the light-mixing layer covers the LED chip by a process of inertial force, expresseure or condensation.

13. The LED component of Claim 11, wherein the light-mixing layer covers the LED chip by a coating or printing process.

14. The LED component of Claim 11, wherein the light-mixing layer covers the LED chip by a sputtering, cladding or evaporation process.

15. The LED component of Claim 11, wherein the light-mixing layer keeps a distance from the LED chip, and the light-mixing layer

absorbs the light emitted from the LED chip by reflection.

16. A light-mixing method, comprising the following steps:

providing a light-mixing layer including light-scattering particles,  
phosphor particles and diffuser particles, and the light-mixing layer used for  
5 absorbing the light emitted from a light source;

utilizing the light-scattering particles to scatter the light emitted from  
the light source;

utilizing the phosphor particles to convert a portion of the light  
originating from the light source into another wavelength light; and

10 utilizing the diffuser particles to mix the light emitted from the light-  
scattering particles and the phosphor particles.

17. The light-mixing method of Claim 16, wherein an arrangement  
of the light-scattering particles, diffuser particles and diffuser particles is  
made by a process of printing, dispersion, SPIN, evaporation, inertial force,  
15 expressure, condensation, cladding or sputtering.

18. The light-mixing method of Claim 16, wherein an arrangement  
of the light-scattering particles, phosphor particles and diffuser particles is  
dependent on a usage level of gravitation, inertia, pressure and  
solidification.

20 19. The light-mixing method of Claim 16, wherein the light-  
scattering particles are made of quartz, glass or polymeric transparent  
materials.

20. The light-mixing method of Claim 16, wherein the diffuser  
particles are selected from a group consisting of  $\text{BaTiO}_3$ ,  $\text{Ti}_2\text{O}_3$  and  $\text{SiO}_x$ .

25 21. The light-mixing method of Claim 16, wherein the phosphor

particles are made of an inorganic phosphor matter.

22. The light-mixing method of Claim 16, wherein the light-scattering particles occupy 10% to 70% by weight, the phosphor particles occupy 10% to 65% by weight and the diffuser particles occupy 15% to 60% by weight.

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